

What is claimed is:

- sub a1*
1. An audio processing apparatus comprising:
a first filter means for converting n -channel ($n \geq 1$, positive integer) audio signals supplied from at least one signal source into two-channel signals;
a pair of second filter means to which two-channel output signals from the first filter means are supplied and which provides an uncorrelated processing means for setting different delay times for transfer functions to the supplied two-channel input signals; and
an output unit for supplying output signals output from the pair of second filter means to left and right loudspeaker units of a headphone.
 2. An audio processing apparatus according to claim 1, wherein the pair of second filter means are constituted by a digital filter, and a pair of uncorrelated processing means for setting delay times for transfer functions are constituted by delay units having different delay times.
 3. An audio processing apparatus according to claim 1, wherein the pair of second filter means are constituted by a digital filter, and a pair of uncorrelated processing means for setting delay times for transfer functions are constituted by a

delay unit for outputting a plurality of delay times, a multiplier for setting each delay time output to an arbitrary value, and an adder for adding each multiplier output.

sub a1
cont } 4. An audio processing apparatus according to claim 1, wherein the pair of first filter means are constituted by digital filters having characteristics same or equivalent in transfer characteristics.

5. An audio processing apparatus according to claim 1, further comprising a detection means for detecting a direction of movement of the head of a listener wearing the headphone, wherein the transfer functions of the pair of second filter means are made variable depending on an output from the detection means.

6. An audio processing apparatus according to claim 1, wherein the detection means for detecting a direction of movement of the head of a listener wearing the headphone is a piezoelectric vibration gyro, and the transfer functions of the pair of second filter means are made variable depending on an output from the piezoelectric vibration gyro.

7. An audio processing apparatus according to claim 1, wherein the detection means for detecting a direction of

movement of the head of a listener wearing the headphone is a geomagnetic azimuth sensor, and the transfer functions of the pair of second filter means are made variable depending on an output from the geomagnetic azimuth sensor.

8. An audio reproducing method comprising:

a first conversion process of converting n-channel ($n \geq 1$, positive integer) audio signals supplied from at least one signal source into two-channel signals on the basis of two series of impulse responses from a sound source to left and right ears of a listener;

a second conversion process of independently performing reflective sound adding processes for a pair of uncorrelated processing means for setting a delay time to transfer functions with respect to two-channel output signals from the first conversion processing means, and

a process of reproducing two-channel output signals subjected to the second conversion process near left and right ears of the listener.